



**Environmental Assessment
for
Enable Gas Transmission
Vegetation Management Project**

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U.S. Forest Service
Ouachita National Forest

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Chapter 1

Purpose of and Need for the Proposed Action

1.1 INTRODUCTION

The U.S. Forest Service (Forest Service) Ouachita National Forest (ONF) proposes to amend Enable Gas Transmission's (EGT) pipeline rights-of-way (ROWs) maintenance special use permit to allow application of selected herbicides for vegetation control (maintenance) along 19.53 miles of natural gas pipeline ROWs (lines AC, BT-1, and BT-1-AN) traversing National Forest System (NFS) lands. Approximately 18.35 miles of pipeline ROW on the Jessieville-Winona-Fourche Ranger District and approximately 1.18 miles on the Caddo-Womble Ranger District (project area) would be authorized for herbicide use (Figure 1, Figures A.1-4 in Appendix A). ROW widths vary from 60 to 110 feet, with the average being 80 feet. Herbicides would not be applied in riparian or streamside management areas.

This environmental assessment (EA) was prepared to determine whether effects of the proposed permit amendment (Proposed Action) may be significant enough to prepare an environmental impact statement. By preparing this EA, the Forest Service is fulfilling agency policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations.

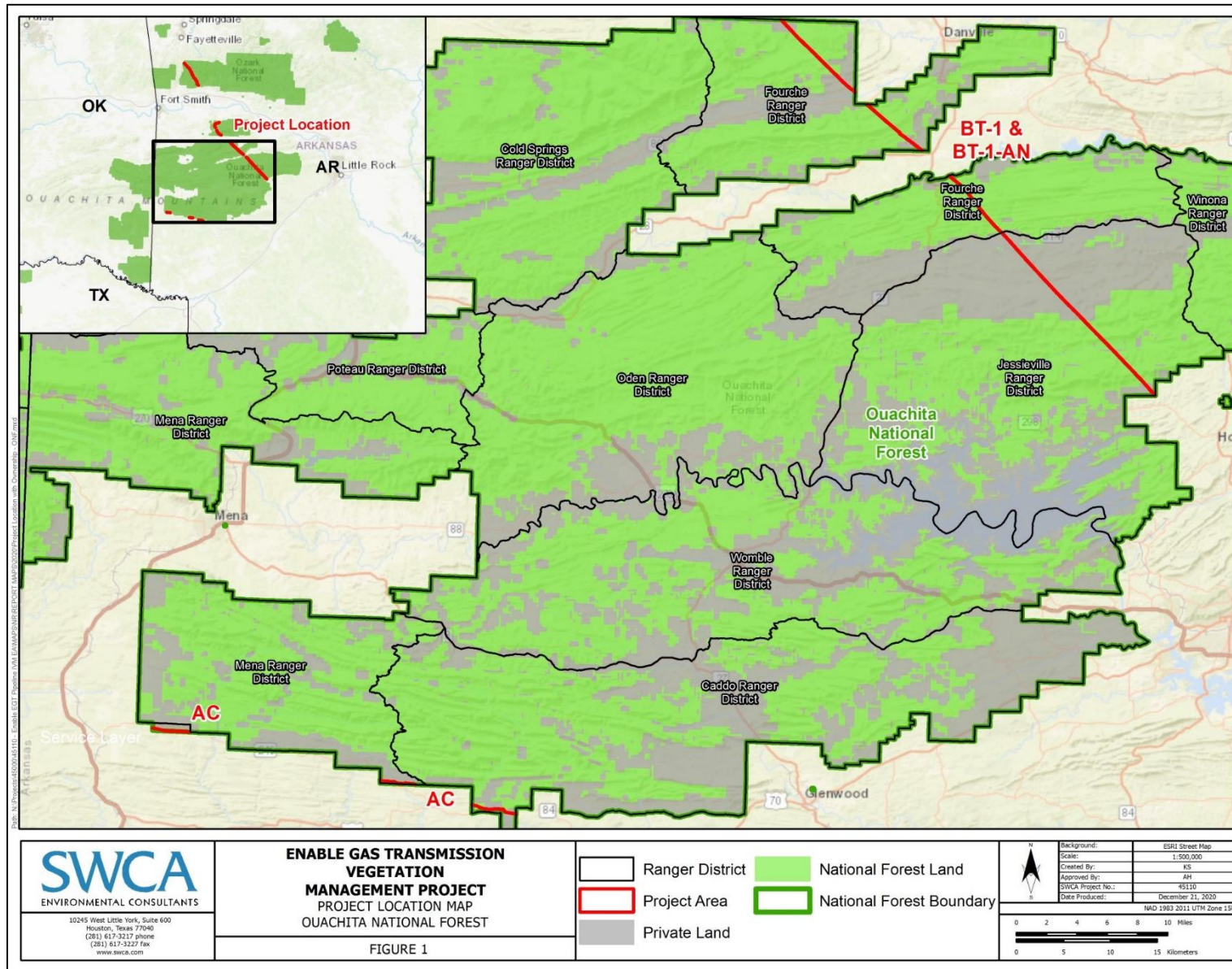


Figure 1. Project location map.

1.2 PURPOSE OF AND NEED FOR THE ACTION

The purpose of this project is to determine if EGT's existing special use authorization should be amended to allow the use of selected herbicides during vegetation management of existing natural gas pipeline ROWs. Pipeline companies are responsible for the sound maintenance of the pipelines and to check for leaks to ensure public safety. Much of the terrain along EGT's pipeline ROWs on NFS lands is steep, which makes vegetation management through solely mechanical control methods slow, costly, and potentially dangerous to equipment operators. It is anticipated that the use of chemical vegetation management would reduce the frequency of mechanical cutting by reducing the spread and establishment of woody vegetation and favoring a prevalence of grasses and other herbaceous vegetation. This would improve access for operations and maintenance activities along the ROWs.

1.3 SCOPE OF THIS ENVIRONMENTAL ANALYSIS

1.3.1 Relevant Planning Documents

The following documents directly influence the scope of this environmental analysis:

- Revised Land and Resource Management Plan, Ouachita National Forest, Arkansas and Oklahoma (Forest Plan) (Forest Service 2005a)
- Final Environmental Impact Statement for the Revised Land and Resource Management Plan, Ouachita National Forest, Arkansas and Oklahoma (Forest Service 2005b)

The Forest Plan guides natural resource management activities for the ONF. Within the Forest Plan, the relevant forest management directives that apply to the Proposed Action are found in the Desired Conditions (Forest Service 2005a:6–26), Strategies (Forest Service 2005a:27–72), and Design Criteria (Forest Service 2005a:73–123) sections and incorporated by reference.

1.3.2 History of the Planning and Scoping Process

A project announcement letter was mailed to the Jessieville-Winona-Fourche Ranger District and Caddo-Womble Ranger District's public mailing lists, including the State Historic Preservation Office (SHPO), nine Tribes, and the Arkansas Natural Heritage Commission (ANHC), on September 23, 2019. The following public comments were received in response to this solicitation: 1) the ANHC submitted comments regarding potential impacts to rare plant species; 2) the Arkansas Department of Health submitted comments regarding the source water assessment area (SWAA) for Danville Waterworks and riparian buffers and requested shapefiles of the pipeline ROWs; and 3) the Chickasaw Nation indicated that this project is outside of their area of interest.

1.3.3 Issues

Issues (cause-effect relationships) serve to highlight effects or unintended consequences that may occur from the Proposed Action, providing opportunities during the analysis to explore alternative ways to meet the purpose and need while reducing adverse effects. Issues also provide a tool for comparing trade-offs for the decision maker and public to understand.

Based on a review of internal and external comments, the Forest Service Interdisciplinary Team identified the following issues to be analyzed in depth:

- **Issue 1:** The Forest Plan states that herbicides will be used only where necessary to achieve the desired condition in the treatment area (Forest Service 2005a:87). Forest policy requires analysis of alternatives to herbicide use; the No Action alternative would result in EGT's continued mechanical maintenance routine on NFS lands.
- **Issue 2:** Herbicide application may affect cultural resources.
- **Issue 3:** Herbicide use may affect vegetation, water, and soil resources.
- **Issue 4:** Herbicide use may result in adverse impacts to special status wildlife and plant species.
- **Issue 5:** Herbicide use may result in adverse impacts to public health and safety.

Certain impact topics were eliminated from consideration in this EA because either the resources are not present in the project area or because there are no anticipated impacts to the resource. These resource topics include socioeconomics, air quality, noise, and recreation. In addition, no impacts to water resources are anticipated due to the avoidance of streamside management areas and implementation of design standards and BMPs (see Section 2.2.3).

1.4 DECISIONS TO BE MADE

The Proposed Action and No Action alternatives are detailed in Chapter 2 and potential environmental consequences are detailed in Chapter 3. Based on the analysis, the Forest Supervisor must decide which alternative to select. The Forest Supervisor must also determine if the selected alternative would or would not be a major Federal action and whether the selected alternative would significantly affect the quality of the human environment.

Chapter 2

Alternatives Including the Proposed Action

2.1 NO ACTION

Under the No Action alternative, the Proposed Action would not be implemented. EGT would continue to maintain pipeline ROWs entirely through mechanical methods in a cyclic 3-year cutting pattern to control vegetative growth. The No Action alternative would continue to allow EGT to conduct aerial and ground surveillance to detect leaks, identify third-party encroachment and erosion problems, and provide access for routine maintenance and corrosion control surveys. Mechanical methods consist of various types of vehicle cutting equipment, such as tractor or track-mounted bush hogs, as well as hand clearing involving the use of hand-carried saws, chainsaws, and other cutting equipment. Under the No Action alternative, these methods would continue to be used in the ROW in both upland and riparian areas. This alternative represents the current condition and serves as a baseline against which the effects of the Proposed Action can be compared.

2.2 PROPOSED ACTION

Under the Proposed Action alternative, herbicide applications would be used to target woody vegetation within the project area. The herbicides proposed for use were selected from those commonly used by the Forest Service and for which Human Health and Ecological Risk Assessments have been completed. Herbicides would be used on upland portions of ROW only; no chemicals would be applied within riparian or streamside management areas. Mechanical methods could be used in riparian and streamside management areas when necessary. Application methods would include backpack foliar spray, broadcast spray, and the hack-and-squirt method, as described below, to reduce woody stem vegetation. The Proposed Action does not include using herbicides to treat non-native invasive plant species within ROWs.

2.2.1 Application Methods

2.2.1.1 Direct Foliar Spray

The direct foliar spray application method uses low-volume, low-pressure backpack sprayers to apply an herbicide in water/surfactant or a methylated seed oil mixture to the foliage of selected small-diameter, woody-stem vegetation, including brush and small trees. Targeted woody-stem vegetation within the existing ROW footprints would be treated by individuals with backpack sprayers. Grasses and other types of non-woody vegetation would not be directly treated, and no products would be directly sprayed on the ground or in waterbodies. Backpack foliar treatments are recommended for selective treatment of sparse vegetation to ensure that total herbicide application rates stay within label application rate restrictions and can also effectively treat dense stands of target plants. Actual herbicide usage would vary according to the number and types of small-diameter woody-stem plants requiring treatment in each segment of pipeline ROWs.

The direct foliar application method would also be used to remove broadleaf plants and maintain grasses for line-of-sight and leak detection access within a 10-foot-wide corridor centered on each pipeline in upland areas. In riparian areas the corridor would be manually/mechanically maintained.

2.2.1.2 Broadcast Spray

Broadcast herbicide application may also be used within the 10-foot-wide centerline corridor on an as-needed basis. This method uses backpacks equipped with rear-mounted spray nozzles that apply a calibrated rate per acre at a set pattern on the ROW.

The applicator walks a steady pace equipped with a volume control pump to match application rates to the walking speed and maintain a consistent swath and application rate, thus insuring precise applications.

2.2.1.3 Hack-and-Squirt

Woody-stem vegetation larger than specified diameters and heights does not respond as successfully to foliar spray and requires a different method of application commonly referred to as the hack-and-squirt method. The hack-and-squirt method is a selective treatment for larger woody-stem vegetation unsuitable for backpack foliar application. Brush or trees 6 feet tall or greater or 3 inches in diameter or greater are typically more effectively managed by this method. A more concentrated mixture of commercial herbicide formulations, referred to herein as the hack-and-squirt mixture, is used for individual application to the stems of woody-stem plants only. Once these large woody stems are identified, the field crews would cut or hack a series of ring cuts around the stem into the cambium layer. The hack-and-squirt mixture is immediately applied by hand with a small spray bottle to the cut stem area at an approximate ratio of 1 cubic centimeter (cc) per 1-inch diameter of the stem (i.e., a 4-inch stem would be treated around the cut ring with approximately 4 cc of mixture) to prevent regrowth.

2.2.2 Herbicides

The herbicides proposed for use and their application methods are listed in Table 1. Risk assessment studies for the proposed herbicides have been developed for the Forest Service by Syracuse Environmental Research Associates, Inc. (SERA), and are referenced throughout this document.

Table 1. Herbicides Proposed for Use

Herbicide Name	Application Method
Aminopyralid	Foliar or broadcast
Aminocyclopyrachlor	Foliar or broadcast
Imazapyr	Foliar, broadcast, or hack-and-squirt
Glyphosate	Foliar, broadcast, or hack-and-squirt
Metsulfuron Methyl	Foliar or broadcast

New chemicals that become available for this project may be used if a Forest Service–approved risk assessment shows 1) their use meets or exceeds the standards for protection of the environment published in the Forest Plan, and 2) their environmental impact is within the scope and range of effects considered in this EA. This also applies to existing/known chemicals without Forest Service–approved risk assessments; should risk assessments for these known chemicals become available in the future, these chemicals may be used if they meet the criteria described above.

2.2.3 Project Design Criteria and Monitoring

Design criteria from the Forest Plan provide the technical and scientific specifications that must be met to complete acceptable projects (Forest Service 2005a:73-123). Design criteria were developed to ensure compliance with applicable laws, regulations, executive orders, and policies; and to resolve management issues and concerns.

Under the Proposed Action, all applicable design criteria would be carried out as detailed in the Forest Plan, including those specific to herbicide application. Some of the relevant design criteria that apply to the project include:

- HU006: Buffers specified in the Forest Plan design standards will be clearly marked before applying herbicides so that applicators can easily see and avoid them (Forest Service 2005a:87).
- TE008: Herbicides will not be applied to Ozark chinquapin (*Castanea pumila* var. *ozarkensis*), and stems of this species will be individually flagged or otherwise marked in the field by qualified personnel prior to herbicide application within the stand. Use of soil active, mobile herbicides should not be applied where they might move to the root system of this species¹ (Forest Service 2005a:77).
- HU002: Herbicides will be applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human and wildlife health. Application rate and work time must not exceed levels that pose an unacceptable level of risk to human or wildlife health. Site-specific risk assessments are required prior to herbicide application and must be calculated using the procedure developed by SERA. Should contractor or methodology change, a standard at least equally restrictive will be imposed to define acceptable risk (Forest Service 2005a:87).
- HU009: With the exception of permittee treatment of ROW corridors that are continuous into or out of private land and through Forest Service managed areas, no herbicide will be broadcast within 100 feet of private land or 300 feet of private residence, unless the landowner agrees to closer treatment (Forest Service 2005a:88).

¹ 30 feet per Forest Botanist.

- HU010: The use of herbicides is prohibited in the immediate vicinity¹ of proposed, endangered, or threatened plants. In areas occupied by sensitive plant species, herbicides will be applied only where site-specific environmental analysis and biological evaluation conclude that there would be no negative effects or that the potential benefits of herbicide use significantly outweigh the potential negative effects (Forest Service 2005a:88).
- HU011: Within a 300-foot buffer from any source waters (public water supply), no herbicide treatments will be applied unless a site-specific analysis supports use within the designated buffer to prevent more serious environmental damage than is predicted if pesticides are used (Forest Service 2005a:88).
- All glades will be delineated on the ground prior to commencing work with a 30-foot buffer to prevent herbicides from entering the area. All streamside management areas will be delineated on the ground with a 100-foot buffer to prevent herbicides from being applied (Table 2) (Forest Service 2005a:103).
- HU012: No herbicide mixing, loading, or cleaning areas will occur within a 300-foot buffer of private land, open water, source waters (public water supply), wells, or other sensitive areas (Forest Service 2005a:88).
- HU013: Application equipment, empty herbicide containers, clothes worn during treatment, and skin will not be cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separately labeled containers (Forest Service 2005a:88).
- HU015: Weather will be monitored, and the project will be suspended if temperature, humidity, or wind exceeds a threshold for herbicide use (Table 3) (Forest Service 2005a:88–89).

Table 2. Minimum Width of Streamside Management Areas, by Slope Class

Type of SMA	0-5% slope	5–15% slope	15–35% slope	35%+ slope
	<i>Horizontal distance from both sides of stream bank or from banks of spring/lake/pond is shown. Distances are shown in feet.</i>			
Perennial stream; woodland seep/spring; lakes and ponds equal to or greater than ½ acre	100	100	125*	150 [†]
Other defined channel; ponds less than ½ acre	30	50	75 [‡]	100 [§]

Source: Forest Service (2005a)

Note: Include only the area to the top of the slope when the slope adjacent to the stream is shorter than the width shown; however, always protect at least 100 feet on either side of perennial streams and 30 feet on either side and above other streams with defined channels.

* Approximate slope distance is 129 feet.

[†] Approximate slope distance is 159 feet.

[‡] Approximate slope distance is 77 feet.

[§] Approximate slope distance is 106 feet.

Table 3. Weather Thresholds for Herbicide Use

Ground Application	Temperatures Must Be No Higher Than	Humidity Must Be No Less Than	Wind Speed Must Be No Greater Than
Hand Cut Surface	No Limit	No Limit	No Limit
Hand Other	98°F	20%	15 mph
Mechanical Liquid	95°F	30%	10 mph
Mechanical Granular	No Limit	No Limit	10 mph

Source: Forest Service (2005a)

Note: F = Fahrenheit; mph = miles per hour

Chapter 3

Environmental Consequences

3.1 SOILS

The desired condition for soils is to maintain the productive potential of the land and to support the maintenance of the natural hydrologic functioning of watersheds, the functional integrity of the natural drainage system, and the inherent capacity of watersheds to absorb and retain water. This is accomplished through proper planning and implementation of all soil disturbing activities according to the design criteria in the Forest Plan.

Soils located on steep slopes are particularly sensitive and prone to erosion. Approximately 20% of the ONF contains slopes greater than 35%. Approximately 80% of the ONF has been rated as having a slight or moderate erosion hazard and 20% as having a severe erosion hazard rating.

3.1.1 No Action

Under the No Action alternative, the current trends and conditions resulting from mechanical vegetation treatment described above are expected to continue. Only mechanical methods would be used to manage vegetation along the ROWs. The use of only mechanical methods would require heavy equipment to access the pipeline ROWs in a cyclic 3-year pattern.

Whether equipped with rubber tires or metal tracks, the weight of the heavy equipment may create both breaks in and compaction of the soil. Impacts to the physical characteristics of soils from heavy equipment, particularly compaction, may affect both hydrologic function and site productivity by reducing or changing porosity and infiltration rates (Neary and Michael 1996). Mulch created during the cutting process may provide some cushion for tires or tracks driving over the area; however, some compaction is likely to occur. These impacts can affect the ability of plants to obtain water and nutrients necessary to sustain productivity.

Vegetation control by heavy mechanical equipment may also leave areas of bare soil, which would be vulnerable to erosion, increasing the potential for precipitation runoff to expose underlying geologic features and cause sedimentation in nearby streams. Sediment loss from sites where vegetation is controlled by mechanical methods can be one to two orders of magnitude greater than natural losses in undisturbed sites (Neary and Michael 1996). Mechanized vegetation control also has the inherent possibility of localized contamination from oil, grease, and fuels. Normal leakages, as well as repairs and maintenance in the field, may result in soil contamination.

3.1.2 Proposed Action

The direct impact of herbicide use on the soil environment depends largely on how much of the active ingredients in the herbicides reach the soil, the resistance of these ingredients to physical degradation and biodegradation, the solubility of the ingredients, and the capacity of the ingredients to adsorb to the soil particles. Herbicides could affect soil productivity through biotic impacts, soil erosion, and nutrient leaching. However, under the Proposed Action, little or no herbicide would reach the soils when applied directly to the woody vegetation foliage, cut stems, or sprouts through direct foliar spray or hack-and-squirt. Herbicides do not physically disturb the soil; therefore, treated areas would have intact litter and duff. The herbicides proposed for use have primarily low soil activity and leaching potential. Herbicide applications do not disturb the nutrient-rich topsoil layer, and do not adversely affect watershed condition when used responsibly (Neary and Michael 1996).

Compared to the No Action alternative, the use of herbicides would decrease or eliminate the need for heavy mechanical equipment. Once the vegetation is in a managed state, mechanical cutting equipment would only be used on an as-needed basis, thereby decreasing the compaction, exposure, and erosion potential of soils in the ROWs. The use of herbicides for ROW vegetation management would result in minimal disturbance of soil compared to the No Action alternative, thus reducing the likelihood of soil erosion and the subsequent potential adverse effects on water quality and aquatic habitat from siltation. Slopes would become increasingly stabilized through a reduction in erosion potential and through the persistence of low-growing non-woody vegetation and their corresponding root systems.

3.2 VEGETATION

The project ROWs cross forested, woodland, and pasture habitats within the ONF. Major waterbody crossings include Fourche LaFave River, South Fourche LaFave River, Dry Fork Fourche LaFave River, and North Fork Creek (Figure 2). Table 4 quantifies the vegetation communities present within the ROWs. The predominant cover type is forest-woodland.

Table 4. Vegetation Community Types within the Project Area

Cover Type	Acres	Percentage
Ozark-Ouachita Dry-Mesic Oak Forest	171.1	45%
Pasture/Hay	56.7	15%
Ozark-Ouachita Dry Oak Woodland	51.9	13%
Ozark-Ouachita Shortleaf Pine-Bluestem Woodland	43.9	11%
Ozark-Ouachita Shortleaf Pine-Oak Forest and Woodland	32.9	8%
Developed, High Intensity	6.1	2%
Harvested Forest–Grass/Forb Regeneration	4.4	1%
Developed, Open Space	4.3	1%
Recently burned grassland	4.3	1%
Other	11.2	3%
Total	386.8	100%

Based on its review of the project, the ANHC (2020) noted that glades are likely to occur along the pipeline ROWs. Glades are an important and declining natural community type in Arkansas. Glades occur where the bedrock is at or near the surface. They are characterized by areas of bare rock, expanses of grasses and forbs, and cedar trees where the soil is deeper. In the past, these areas were subject to wildfires, which maintained an open character and reduced the number of cedar trees. Glades are often more biologically diverse than the surrounding forests and frequently support rare species. Both Ouachita indigo-bush or false indigo (*Amorpha ouachitensis*) and Ouachita blazing star (*Liatris compacta*) have been found within the pipeline ROWs in glade and associated woodland habitat (ANHC 2020). Glade species can thrive in pipeline ROWs and are compatible with maintaining an open corridor. However, glade species can be damaged by indiscriminate herbicide application.

The Forest Service manages forest communities through controlled burns and commercial thinning. Noxious weeds and invasive plants outside of EGT's ROWs are controlled using chemical and mechanical methods. Target species for weed control activities in the project area have focused on sericea lespedeza (*Lespedeza cuneata*) at four locations along the ROW between 2010 and 2020.

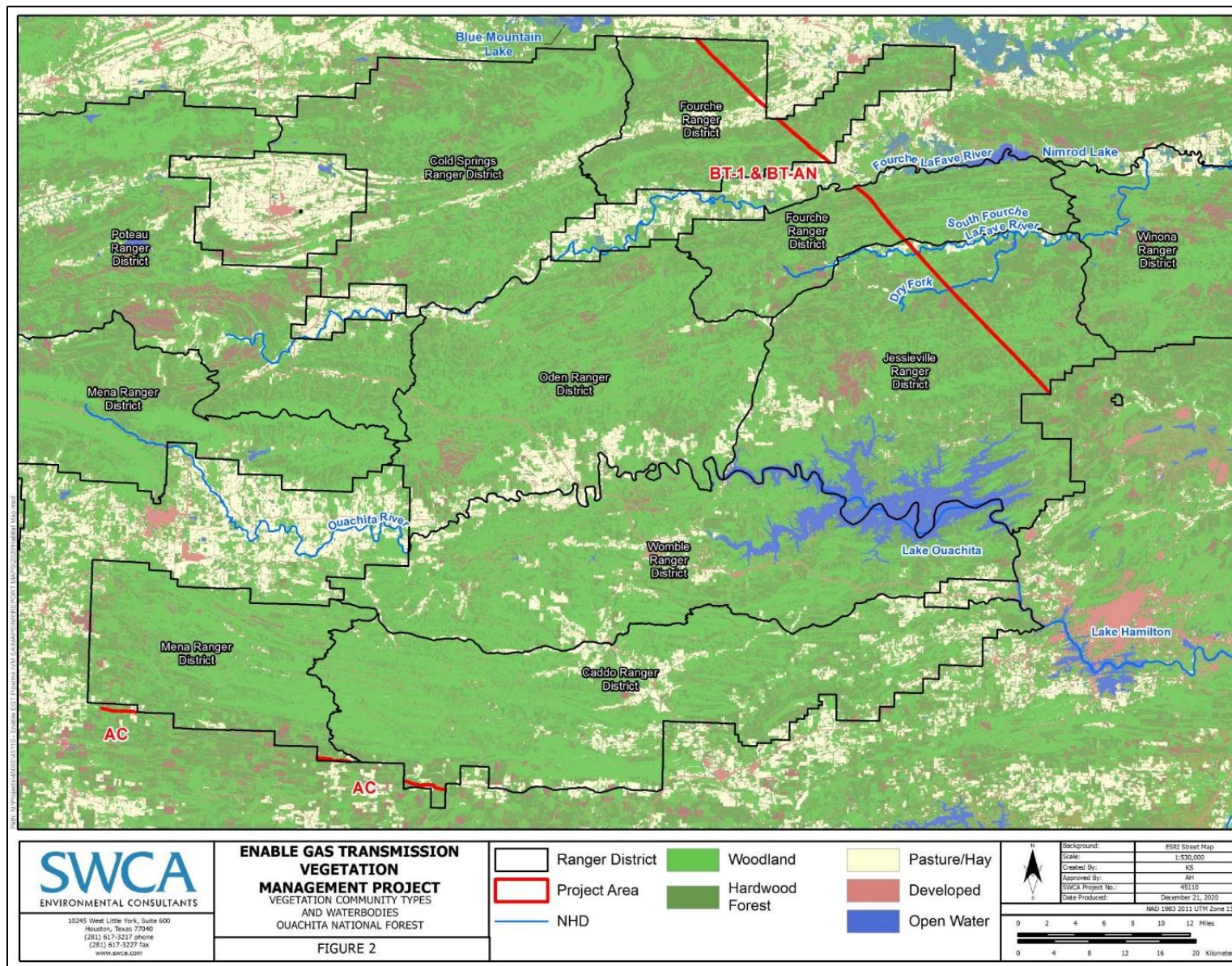


Figure 2. Vegetation community types and waterbodies.

3.2.1 No Action

Under the No Action alternative, woody vegetation within the communities listed in Table 4 would continue to be maintained using mechanical mowing methods. The use of only mechanical methods requires that heavy equipment access the pipeline corridors approximately every 3 years to prevent the re-establishment of woody vegetation that could affect pipeline integrity. The use of this equipment can impact soils (see Section 3.1) which can in turn impact the vegetation communities and spread weeds. Mowing equipment is non-selective in that all vegetation within the path of the machine is cut. Equipment may also run over and damage non-target vegetation and/or sensitive habitats such as glades, through crushing stems or damaging the roots.

3.2.2 Proposed Action

Woody vegetation within the communities listed in Table 4 would be treated with herbicides under the Proposed Action. Only upland habitats would be treated; herbicides would not be applied in riparian habitats or near waterbodies. Mechanical methods could be used in riparian areas when needed. Project design criteria that would protect sensitive vegetation, including riparian habitat and Ozark chinquapin, are listed in Section 2.2.3.

Sensitive plant species including Ouachita indigo-bush and Ouachita blazing star have been found within the pipeline ROWs in glade and associated woodland habitat (see Section 3.6). The application methods would prevent indiscriminate herbicide application to non-target vegetation. Compared to the No Action alternative, the use of herbicides would decrease or eliminate the need for mechanical equipment, thereby decreasing the potential of damaging vegetation and soils and spreading weeds in the ROWs. Slopes would become increasingly stabilized through a reduction in erosion potential and through the persistence of low-growing non-woody vegetation and their corresponding root systems.

3.3 CULTURAL & HISTORICAL RESOURCES

An effect to a cultural resource is the "...alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register [of Historic Places]" (36 Code of Federal Regulations 800.16(i)). Any activity that has potential to disturb the ground has potential to directly affect unidentified archeological sites, if present. There are no known historic or cultural resources present within the ROWs; however, intensive surveys have not been conducted.

3.3.1 No Action

Since the ROWs would continue to be maintained via mechanical means, potential impacts to unknown cultural resources could occur due to the use of heavy equipment that may damage soils on steep slopes. Any sensitive historic or cultural resources that are subsequently found would be avoided.

3.3.2 Proposed Action

No ground disturbance is proposed that would have potential to impact cultural resources, if present. Once the vegetation is in a managed state, mechanical cutting equipment would only be used on an as-needed basis, greatly reducing any further impacts from heavy equipment. Herbicides are low impact to the ground surface and soils since they are applied using backpack sprayers and not heavy equipment that could damage buried cultural resources, if present. Although there are no known historic or cultural resources within the ROWs, any sensitive resources that are subsequently found would be avoided. The SHPO and Tribes have been consulted via public scoping and no concerns have been brought forward to date.

3.4 PUBLIC HEALTH & SAFETY

This section reviews potential impacts to staff working within the ROW or the general public that may use the public land within the vicinity of the ROW.

3.4.1 No Action

No herbicides would be used within the ROWs for the treatment of woody vegetation. Except for accidental worker injury, there would be no effects from manual and mechanical methods on public health and safety. Treatment on steep slopes using heavy mechanical equipment is potentially dangerous to equipment operators.

3.4.2 Proposed Action

The Proposed Action includes use of herbicides within the ROW, except within 300 feet of water resources, private residences, and the public water supply. SERA Human Health and Ecological Risk Assessments were used to analyze the risks associated with the herbicides proposed for treatment. Site-specific risk assessments developed by SERA will be conducted prior to herbicide application as required by design criterion HU002 in the Forest Plan (Forest Service 2005a:87).

Estimates of risk are presented in terms of a hazard quotient (HQ). An HQ is the quotient of an estimate of exposure divided by the appropriate toxicity value. Concern for the development of adverse effects increases as the value of the HQ increases. An HQ value less than 1 is considered an acceptable level of risk. Prudent worker hygiene practices and project design criteria detailed in Section 2.2.3 would reduce human health risks.

Aminocyclopyrachlor may be used at an application rate of up to 0.28 lb/acre. At this rate, the risk assessment indicates the use of aminocyclopyrachlor does not pose any identifiable hazard to workers or the general public. HQs are at acceptable levels (less than 1) for all exposure scenarios.

Aminopyralid may be used at an application rate of 0.11 lb/acre. At this rate, the risk assessment indicates the use of aminopyralid does not pose any identifiable hazard to workers or the general public in Forest Service applications. HQs are at acceptable levels (less than 1) for all exposure scenarios.

Glyphosate may be used at an application rate of 2.15 lbs/acre. HQs for ground foliar broadcast and direct foliar application are at acceptable levels (less than 1) for exposure scenarios except for the following:

- water consumption by a child after an accidental spill: HQ = 2.2
- consumption of contaminated vegetation by an adult female: HQ = 1.5

Herbicides would be applied in accordance with all design criteria listed in Section 2.2.3, which would eliminate the possibility for either of these scenarios to occur.

Imazapyr may be used at an application rate of 1.00 lb/acre. At this rate, the risk assessments indicate the use of imazapyr does not pose any identifiable hazard to workers or the general public. HQs are at acceptable levels (less than 1) for all exposure scenarios.

Metsulfuron Methyl may be used at an application rate of 0.0375 lb/acre. At this rate, the risk assessments indicate the use of metsulfuron methyl does not pose any identifiable hazard to workers or the general public. HQs are at acceptable levels for all exposure scenarios.

3.5 MANAGEMENT INDICATOR SPECIES AND HABITAT

Management Indicator Species (MIS) represent the effects of management activities within a broad array of habitats covering diverse geographic areas within the ONF, as well as inhabiting areas with diverse management objectives. The MIS in Table 5 were selected from the Forest list for the Proposed Action due to potential impacts to terrestrial woodland habitats and Arkansas River Valley species that represent the South Fourche LaFave River crossing.

Table 5. Representative Management Indicator Species

Scientific Name	Common Name	Primary Reason for Selection. To help indicate effects of management on:
<i>Odocoileus virginianus</i>	White-tailed deer	meeting public hunting demand
<i>Colinus virginianus</i>	Northern bobwhite	meeting public hunting demand, and the pine-oak woodland community
<i>Dendroica discolor</i>	Prairie warbler	the early successional component of forest communities
<i>Meleagris gallopavo</i>	Eastern wild turkey	meeting public hunting demand
<i>Dryocopus pileatus</i>	Pileated woodpecker	snags and snag-dependent species
<i>Piranga olivacea</i>	Scarlet tanager	mature forest communities
<i>Ameiurus natalis</i>	Yellow bullhead	
<i>Campostoma anomalum</i>	Central stoneroller	
<i>Etheostoma whipplei</i>	Redfin darter	Desired condition for conservation of productive soils and beneficial uses of water and direction within Arkansas River Valley streams
<i>Lepomis cyanellus</i>	Green sunfish	
<i>Lepomis megalotis</i>	Longear sunfish	

Source: Forest Service (2005b)

3.5.1 No Action

3.5.1.1 White-tailed Deer (*Odocoileus virginianus*)

Deer may be temporarily displaced from treatment areas during mowing. Adults are mobile, but fawns could be injured by mechanical equipment if implemented during fawning season. Treatment activities reduce woody vegetation and provide more beneficial browse. Overall, the No Action alternative would continue to have a positive effect on the Forest-wide population trend for this species by increasing foraging opportunities of native plants and browse. Therefore, this indicates that there would be no impact on public hunting demand.

3.5.1.2 Northern Bobwhite (*Colinus virginianus*)

Mechanical equipment could crush individuals and eggs, as this species nests on the ground. Adults and fledglings are highly mobile and would most likely relocate from disturbance. Loss of nests and individuals could occur, but birds would most likely re-nest. Overall, the No Action alternative would continue to have a positive effect on the Forest-wide population trend for this species by increasing herbaceous grass/forb foraging opportunities. Therefore, this indicates that there would be no impact on public hunting demand or pine-oak woodland communities.

3.5.1.3 Prairie Warbler (*Dendroica discolor*)

The prairie warbler represents early successional forest communities. This species nests in shrubby habitats, including regenerating forests and open fields. Mowing woody vegetation could damage or destroy eggs and nests if operations occur during nesting season and in nesting habitat. However, most work would take place outside the nesting season. Overall, the No Action alternative would continue to have a positive effect on the Forest-wide population trend for this species by increasing herbaceous grass/forb foraging opportunities.

3.5.1.4 Eastern Wild Turkey (*Meleagris gallopavo*)

Turkeys may be temporarily displaced during resource management activities and nests may be abandoned. Prescribed burning and mechanical methods such as mowing could damage or destroy eggs and nests if operations occur during nesting season and in nesting habitat. However, most work would take place outside the nesting season. Reduced stem density would improve nesting and brooding conditions. Overall, the No Action alternative would continue to have a positive effect on the Forest-wide population trend for this species by increasing herbaceous grass/forb foraging opportunities.

3.5.1.5 Pileated Woodpecker (*Dryocopus pileatus*)

Other than possible disturbance from noise, there would be no effects on individuals, eggs or nests from mowing methods because pileated woodpeckers roost and nest in cavity trees or snags (standing dead trees). Some habitat loss would occur due to loss of some woody shrubs. Overall, the No Action alternative would continue to have a positive effect on the Forest-wide population trend for this species by increasing foraging opportunities.

3.5.1.6 Scarlet Tanager (*Piranga olivacea*)

Other than possible disturbance from noise, there would be no effects on individuals, eggs or nests from mowing methods because the tanager nests in areas with a high canopy. This species represents mature forest communities which are not affected by mowing.

3.5.1.7 Arkansas River Valley Stream Species

Yellow bullhead, central stoneroller, redbfin darter, green sunfish, and longear sunfish represent the South Fourche LaFave River which intersects the project area. Mowing within the ROW to reduce woody vegetation is not anticipated to have an effect on these species or their habitat. Mechanical actions may result in small amounts of sediment entering streams.

3.5.2 Proposed Action

3.5.2.1 White-tailed Deer (*Odocoileus virginianus*)

Deer may be temporarily displaced from treatment areas during treatment activities. Treatment activities would reduce woody vegetation and would provide more beneficial browse. Overall, the Proposed Action would have a positive effect on the Forest-wide population trend for this species by increasing foraging opportunities of native plants and browse. Therefore, this indicates that there would be no impact on public hunting demand.

Table 6 summarizes the toxicity of herbicides to rats and can be used to evaluate toxicity to mammals. Acute oral and dietary studies of the listed chemicals exhibit a range in analysis toxicity from nontoxic to relatively nontoxic to rats. These determinations were based on concentrations of herbicides in rat diets that would in all cases far exceed concentrations in field treatment applications.

Table 6. Toxicity Risk to Mammals

Active Ingredient	LD ₅₀	Toxicity Risk to Rat	Risk Assessment
Aminocyclopyrachlor	>5,000 mg/kg bw	Nontoxic	SERA 2012
Aminopyralid	4,730 mg/kg bw	Relatively nontoxic	SERA 2007
Glyphosate	>5,000 mg/kg bw	Relatively nontoxic	SERA 2011a
Imazapyr	>5,000 mg/kg bw	Relatively nontoxic	SERA 2011b
Metsulfuron Methyl	>3,000 mg/kg bw	Relatively nontoxic	SERA 2005

Note: > = greater than; bw = body weight; kg = kilograms; LD₅₀ = lethal dose for 50% of population tested; mg = milligrams.

Toxicity risk to mammals from exposure to the herbicides ranged from nontoxic to relatively nontoxic for acute to long-term consumption of contaminated vegetation. The application of herbicides according to label rates, the Forest-wide standards, and specified frequency is not expected to affect deer in an acute or chronic manner. For the control of woody species within the EGT pipeline ROWs, it is expected that the amount of herbicide application would be greater for the first year of treatment and will progressively lessen as control of woody vegetation increases.

3.5.2.2 Northern Bobwhite (*Colinus virginianus*)

Native plants that provide nesting and hiding, and foods that ground-nesting birds have adapted to and utilize heavily, would increase in abundance and diversity. The Proposed Action would have an overall positive effect on the Forest-wide population trend for this species by increasing foraging opportunities of native plants and insects. Therefore, this indicates that there would be no impact on public hunting demand or pine-oak woodland communities.

Table 7 summarizes the toxicity of herbicides to bobwhite and mallard and can be used to evaluate toxicity to MIS birds. Acute oral and dietary studies of the listed chemicals exhibit a range in analysis toxicity from practically nontoxic to slight toxicity to birds consuming contaminated vegetation and insects. These determinations were based on concentrations of herbicides in quail diets that would in all cases far exceed concentrations in field treatment applications. The application of herbicides according to label rates, the Forest-wide standards, and specified frequency is not expected to affect birds in an acute or chronic manner. For the control of woody species within the EGT pipeline ROWs, it is expected that the amount of herbicide application would be greater for the first year of treatment and will progressively lessen as control of woody vegetation increases.

Table 7. Toxicity Risk to Birds

Active Ingredient	LD ₅₀	Toxicity Risk to Bobwhite and/or Mallard	Risk Assessment
Aminocyclopyrachlor	2,423 mg a.e./kg bw	Practically nontoxic	SERA 2012
Aminopyralid	>2,250 mg a.e./kg bw	Relatively nontoxic	SERA 2007
Glyphosate	>2,000 mg/kg bw	Slightly toxic	SERA 2011a
Imazapyr	>2,150 mg/kg bw	Very low toxicity	SERA 2011b
Metsulfuron Methyl	>2,250 mg/bw	Relatively nontoxic	SERA 2005

Note: > = greater than; bw = body weight; kg = kilograms; LD₅₀ = lethal dose for 50% of population tested; mg = milligrams.

3.5.2.3 Prairie Warbler (*Dendroica discolor*)

Prairie warbler may occur in shrubby habitats treated as part of the Proposed Action. The effects would be the same as for bobwhite. The application of herbicides according to label rates, the Forest-wide standards, and specified frequency is not expected to affect birds in an acute or chronic manner.

3.5.2.4 Eastern Wild Turkey (*Meleagris gallopavo*)

Turkeys may be temporarily displaced during resource management activities and nests may be abandoned. Reduced stem density would improve nesting and brooding conditions. Overall, the Proposed Action would have a positive effect on the Forest-wide population trend for this species by increasing herbaceous grass/forb foraging opportunities.

3.5.2.5 Pileated Woodpecker (*Dryocopus pileatus*)

The Proposed Action would not affect pileated woodpecker roosts or nests since they are in cavity trees or snags (standing dead trees). Some habitat loss would occur due to loss of some woody shrubs. The application of herbicides according to label rates, the Forest-wide standards, and specified frequency is not expected to affect birds in an acute or chronic manner. Overall, the Proposed Action would have a positive effect on the Forest-wide population trend for this species by increasing foraging opportunities.

3.5.2.6 Scarlet Tanager (*Piranga olivacea*)

The Proposed Action would not affect tanager eggs or nests because the tanager nests in areas with a high canopy. This species represents mature forest communities which are not affected by herbicides. Effects from consumption of contaminated insects is not expected due to application of herbicides according to label rates, the Forest-wide standards, and specified frequency. Overall, the Proposed Action would have a positive effect on the Forest-wide population trend for this species by increasing foraging opportunities.

3.5.2.7 Arkansas River Valley Stream Species

Yellow bullhead, central stoneroller, redbfin darter, green sunfish, and longear sunfish represent the South Fourche LaFave River which intersects the project area. Spraying would not occur within 300 feet of streams and potential for drift is further reduced by Forest-wide standards and Design Criteria. There is a slight potential that the Proposed Action may result in small amounts of sediment entering streams or runoff of herbicides into streams.

Table 8 summarizes toxicity of herbicides to bluegill (*Lepomis macrochirus*) and can be used to evaluate toxicity to fish.

Table 8. Toxicity Risk to Fish

Active Ingredient	LD ₅₀	Toxicity Risk to Bluegill	Risk Assessment
Aminocyclopyrachlor	>120 mg a.i./L	Practically nontoxic	SERA 2012
Aminopyralid	>100 mg a.c./L	Relatively nontoxic	SERA 2007
Glyphosate	70–170 mg/L	Practically nontoxic	SERA 2011a
Imazapyr	>100 mg/L	Practically nontoxic	SERA 2011b
Metsulfuron Methyl	>150 mg/L	Practically nontoxic	SERA 2005

Note: > = greater than; L = liter; LD₅₀ = lethal dose for 50% of population tested; mg = milligrams.

3.6 PROPOSED, ENDANGERED, THREATENED, AND SENSITIVE (PETS) SPECIES

All PETS species were considered in the Biological Evaluation (BE) for this project. Some species were eliminated from consideration because 1) they do not occur in the ONF, 2) their known distribution is well outside the counties and/or watersheds that make up the ranger districts, or 3) no potential habitat was found within the ROWs.

The potential occurrence of each species within the ROWs is based on a literature review

of known surveys and information, including ANHC element occurrence records (ANHC 2018, 2020), Information for Planning and Conservation (IPaC) system (USFWS 2020), NatureServe (2020) data, and other pertinent information. Based on this literature review, three federally listed species and 15 sensitive species have the potential to occur within or near the ROWs (Table 9). Details on local distribution, habitat requirements, and herbicide toxicity are provided in the BE and summarized in this section.

No PETS species were recorded along the ROWs during the spring 2020 surveys.

Table 9. Proposed, Endangered, Threatened, and Sensitive Species Evaluated

Scientific Name	Common Name	Listing Status	Class
Federally Listed Species			
<i>Leptodea leptodon</i>	Scaleshell	Endangered	Mussel
<i>Myotis septentrionalis</i> *	Northern long-eared bat	Threatened	Mammal
<i>Ptilimnium nodosum</i> *	Harperella	Endangered	Plant
Forest Service Sensitive Species			
<i>Amorpha ouachitensis</i> *	Ouachita false indigo	Sensitive	Plant
<i>Calamovilfa arcuata</i>	Cumberland sandreed	Sensitive	Plant
<i>Callophrys irus</i>	Frosted elfin	Sensitive	Insect
<i>Carex latebracteata</i>	Waterfall's sedge	Sensitive	Plant
<i>Castanea pumila</i> var. <i>ozarkensis</i>	Ozark chinquapin	Sensitive	Plant
<i>Cyprogenia cf. aberti</i>	Ouachita fanshell mussel	Sensitive	Mussel
<i>Danaus plexippus</i>	Monarch	Sensitive	Insect
<i>Draba aprica</i>	Open-ground draba	Sensitive	Plant
<i>Eriocaulon koernickianum</i>	Gulf pipewort	Sensitive	Plant
<i>Hydrophyllum brownei</i>	Browne's waterleaf	Sensitive	Plant
<i>Lampsilis hydiana</i>	Louisiana fatmucket	Sensitive	Mussel
<i>Lampsilis satura</i>	Sandbank pocketbook	Sensitive	Mussel
<i>Notropis ortenburgeri</i>	Kiamichi shiner	Sensitive	Fish
<i>Percina nasuta</i>	Longnose darter	Sensitive	Fish
<i>Speyeria diana</i>	Diana fritillary	Sensitive	Insect

* Recorded within the ROW (ANHC 2020).

3.6.1 No Action

3.6.1.1 Aquatic and Riparian Species

Aquatic animal species evaluated in the BE include scaleshell (*Leptodea leptodon*), Ouachita fanshell (*Cyprogenia cf. aberti*), Louisiana fatmucket (*Lampsilis hydiana*), sandbank pocketbook (*Lampsilis satura*), Kiamichi shiner (*Notropis ortenburgeri*), and longnose darter (*Percina nasuta*). Plant species found in streamside and riparian habitats that were evaluated in the BE include harperella (*Ptilimnium nodosum*) Browne's waterleaf (*Hydrophyllum brownei*), Ouachita false indigo, Waterfall's sedge (*Carex*

latebracteata), Cumberland sandreed (*Calamovilfa arcuata*), and gulf pipewort (*Eriocaulon koernickianum*).

No impacts to aquatic animal species are anticipated. Mowing in riparian areas could impact listed aquatic plant species, if present. Mowing equipment is non-selective in that all vegetation within the path of the machine is cut. Harperella and Ouachita false indigo have been recorded in the area. Based on Forest-wide standards and design criteria, the stems of sensitive plants must be individually flagged or otherwise marked in the field by qualified personnel prior to mowing and avoided.

3.6.1.2 Northern Long-eared Bat (*Myotis septentrionalis*)

No direct impacts to bats are expected since mowing would occur during daylight hours. Any activity that disturbs the land surface, decreases cover, or alters vegetation can affect water quality, which could in turn adversely affect prey species for bats.

3.6.1.3 Monarch Butterfly (*Danaus plexippus*), Frosted Elfin (*Callophrys irus*), and Diana fritillary (*Speyeria diana*)

Direct effects to these sensitive butterflies are unlikely; however, larvae could be present on plants that are mowed. Host plants with caterpillars on them could be killed during treatment, in turn harming or killing the larvae. Treatment is focused on woody species, most of which do not provide nectar for these butterflies. Reduction in woody vegetation could result in an increase in native forbs that do provide nectar, resulting in a beneficial effect for butterflies. No host plants were observed during 2020 surveys.

3.6.1.4 Openground Draba (*Draba aprica*) and Ozark Chinquapin (*Castanea pumila* var. *ozarkensis*)

Mowing equipment is non-selective in that all vegetation within the path of the machine is cut. Based on Forest-wide standards and design criteria, the stems of Ozark chinquapin and other sensitive plants be individually flagged or otherwise marked in the field by qualified personnel prior to mowing and avoided. Unknown populations that are not flagged could be impacted.

3.6.2 **Proposed Action**

3.6.2.1 Aquatic and Riparian Species

Aquatic animal species evaluated in the BE include scaleshell, Ouachita fanshell, Louisiana fatmucket, sandbank pocketbook, Kiamichi shiner, and longnose darter. Plant species found in streamside and riparian habitats that were evaluated in the BE include harperella, Browne's waterleaf, Ouachita false indigo, Waterfall's sedge, Cumberland sandreed, and gulf pipewort.

Herbicides have the potential to affect water quality and aquatic plants and animals (see Table 8). The potential risk depends on type of herbicide, the amount used, location of use, application methods, and environment conditions in the treatment area. No herbicides would be applied within riparian or streamside management areas or within 300 feet of water sources. In addition, herbicide use is prohibited in the immediate vicinity (i.e., 30 feet) of known populations of proposed, endangered, and threatened

plants. Therefore, no direct effects to aquatic and riparian plant and animal species are expected.

Although herbicides will not be used in aquatic areas, indirect effects could occur if the proposed herbicides used in upland areas move off-site and contaminate adjacent aquatic habitats. Project design criteria are designed to minimize the potential effects on non-target plants and animals including aquatic biota. For example, spraying will be suspended if temperature, humidity, or wind exceeds a threshold for herbicide use.

The structure of the aquatic habitats is not expected to change significantly with the implementation of the Proposed Action. Erosion and sedimentation are expected to decrease due to limited upland mechanical mowing. A review of toxicity data through SERA reports indicates that proposed herbicides have a low potential for adversely affecting aquatic species when applied at label rates. Except for some formulations of glyphosate, the herbicides in acute exposure studies ranged from nontoxic to slightly toxic to aquatic invertebrates. Exposure to glyphosate has been shown to invoke biochemical stress responses in freshwater mussels, but acute mortality rates remain low unless nonionic surfactants are included.

3.6.2.2 Northern Long-eared Bat (*Myotis septentrionalis*)

It is highly unlikely bat species including northern long-eared bat (NLEB) would be directly exposed to herbicides by being sprayed or by brushing against vegetation with wet herbicide because these applications would take place during the daytime hours. There is a slight possibility that NLEB could come into direct contact with wet herbicide as they roost in trees during the day, but NLEB typically requires roost trees with a minimum diameter at breast height of approximately 3 to 5 inches, which are highly unlikely to be present within the maintained ROW. NLEB could come into direct contact with herbicides during the late summer and fall swarming season; herbicides are not typically being used during the spring emergence season in late March/early April. In these areas it would be less likely that bats would have a significant amount of direct herbicide exposure from spraying within the ROW. Indirect effects could include impacts to prey, and indirect contact by ingesting insects or gleaning. Any activity that disturbs the land surface, decreases cover, or alters vegetation can affect water quality, which could in turn adversely affect prey species for bats. However, project design criteria would protect water quality.

Toxicity risk to mammals from exposure to the approved herbicides ranged from nontoxic to relatively nontoxic (see Table 6). The application of herbicides according to label rates, Forest-wide standards, and specified frequency is not expected to affect bats in an acute or chronic manner. For the control of woody species within the EGT's pipeline ROW, it is expected that the amount of herbicide application would be greater for the first year of treatment and will progressively lessen as control of woody vegetation increases. Observance of herbicide application rates, project review and design, Forest-wide standards, and BMPs will be important for minimizing effects from exposure to herbicide. The final Endangered Species Act (ESA) Section 4(d) rule does not include the prohibition of incidental take as a result of pesticide application provided that the application complies with state laws. The Proposed Action is likely to adversely affect NLEB; however, there are no effects beyond those previously disclosed in the

programmatic biological opinion on implementing the final ESA Section 4(d) rule (USFWS 2016).

3.6.2.3 Monarch Butterfly (*Danaus plexippus*), Frosted Elfin (*Callophrys irus*), and Diana fritillary (*Speyeria diana*)

Although unlikely, these sensitive butterflies could be directly sprayed with herbicide. This is most likely to occur as larvae on plants. Host plants with caterpillars on them could be killed by herbicide, in turn harming or killing the larvae. Herbicide application is focused on woody species, most of which do not provide nectar for these butterflies. Reduction in woody vegetation could result in an increase in native forbs that do provide nectar, resulting in a beneficial effect for butterflies. No host plants were observed during 2020 surveys.

The proposed herbicides were found to be relatively nontoxic to insects. Overall, herbicide application would not be more likely to kill butterflies or host plants more than the mechanical control alternative.

3.6.2.4 Openground Draba (*Draba aprica*) and Ozark Chinquapin (*Castanea pumila* var. *ozarkensis*)

Based on Forest-wide standards and design criteria, herbicides would not be applied to Ozark chinquapin or other sensitive plants. Stems would be individually flagged or otherwise marked in the field by qualified personnel prior to herbicide application within the stand. Openground draba occurs within glade ecosystems that are considered as sensitive ecosystems by the Forest. All glades would be delineated on the ground prior to commencing work with a 30-foot buffer to prevent herbicides from entering the area, therefore, reducing potential impacts to openground draba. Use of soil active, mobile herbicides would not be applied where they might move to the root system (i.e., within 30 feet) of this species. Unknown populations that are not flagged could be impacted by herbicide application that targets woody vegetation along the ROW. The potential for this to occur is similar to existing mechanical weed management (the No Action alternative).

The loss of individuals may occur from herbicide drift, although surfactants help to decrease the drift of herbicide as well as adhering to the Forest-wide standards which prohibit the application of herbicides in specific weather conditions. Soil active herbicides and leaching potential could also impact non-target vegetation. The herbicides proposed for use have primarily low soil activity and leaching potential.

3.7 UNIQUE CHARACTERISTICS OF THE GEOGRAPHIC AREA

The proposed activities would have no impact on any unique characteristics occurring on the ONF due to the restrictive nature of application of the proposed treatments as described in Chapter 2, and of the location occurring within a pipeline ROW.

3.8 QUALITY OF THE HUMAN ENVIRONMENT

The effects of the proposed activities are not known to be controversial in the scientific community. The quality of the human environment will not be affected. See Section 3.4 for discussion of Public Health and Safety.

3.9 UNCERTAINTY

There are no effects that are highly uncertain or involve unique or unknown risks. The project is not unique or unusual. The Forest Service has experience implementing similar actions in similar areas. The environmental effects to the human environment are fully analyzed in this EA.

3.10 PRECEDENT FOR FUTURE ACTIONS

This project neither establishes a precedent nor represents a subsequent decision in principle about future actions. The application of herbicides for vegetation management within pipeline ROWs treatment of roadside vegetation by EGT has been occurring on adjacent private lands for many years. A decision to treat FS lands within the ROW would not limit later resource management decisions.

3.11 CUMULATIVE EFFECTS

EGT currently treats woody vegetation with herbicides within their ROWs on state and federal lands and will continue to do so. The Proposed Action will add an additional 19 miles of herbicide treatment along their ROW in the ONF. Herbicides are also used by FS in the ONF to treat weeds, including the invasive *Sericea lespedeza*, on ROWs and along roads. The Arkansas Department of Transportation also uses herbicides as part of their roadside vegetation maintenance along state and federal highways that pass through NFS lands. The Forest Service uses herbicides for various forest management purposes and vegetation manipulation. All treatments within the ONF administrative boundary are subject to the riparian exclusion area and other design criteria in Section 2.2.3. Private landowners in the area also use herbicides and may use different herbicides and application methods than those used on Forest Service land.

Potential effects on public health and safety from the additional 19 miles of herbicide treatments would be similar to existing conditions. The project would not significantly increase herbicide use beyond existing levels and effects would be confined within the project area.

The risk to MIS and PETS species from herbicides on Forest Service lands will be minimal, but the potential risk from private land use is harder to predict. The Forest Service does not know of any future State, Tribal, local, or private actions that would occur in the ROW that would contribute to the cumulative effects. The amount of herbicide that will enter the aquatic system should be minimal, if any. Potential cumulative effects from the proposed activities should not affect aquatic habitats or populations of MIS or PETS species. The potential cumulative effects on terrestrial populations of MIS or PETS species may be beneficial through the reduction in woody vegetation, thus, increasing native forbs that provides an increase in nectar, insect populations, and foraging opportunities for many species.

Other types of vegetation treatments that the Forest Service has implemented over the last 5 years (2016-2020) that overlap the ROW include:

- Commercial thinning (1.7 acres)

- Pollinator habitat improvements (28.87 acres)
- Precommercial thinning (1.7 acres)
- Tree release and weed (3.6 acres)
- Underburn, low intensity (37.1 acres)
- Wildlife habitat improvements (8.8 acres)

Activities planned for the next 5 years (2021-2025) include:

- Commercial thinning (4.1 acres)
- Understory vegetation control (15.2 acres)
- Planting and seeding (2.6 acres)
- Stand silviculture (10.3 acres)
- Tree release and weed (2.9 acres)
- Wildlife habitat improvements (9.4 acres)

3.12 FEDERAL, STATE, OR LOCAL LAWS

The Proposed Action would not violate any known Federal, State, or local law or requirement imposed for the protection of the environment. The Proposed Action is consistent with the Forest Plan and applicable policies and programs.

Chapter 4

Coordination and Consultation

4.1 COORDINATION

The following individuals contributed to the preparation of this EA:

Jade Ryles	Forest NEPA Coordinator
Clay Vanhorn	Forest Biologist
Susan Hooks	Forest Botanist
Andrew Triplet	Forest Archeologist
Don Seal	Forest Hydrologist

4.2 CONSULTATION

The following organizations were invited to provide input on this EA:

Caddo Nation of Oklahoma
Chickasaw Nation
Choctaw Nation of Oklahoma
Coushatta Tribe of Louisiana
Jena Band of Choctaw Indians
Mississippi Band of Choctaw Indians
Osage Nation
Tunica-Biloxi Indian Tribe
Quapaw Tribe of Oklahoma
Arkansas Department of Health
Arkansas Natural Heritage Commission
Arkansas Historic Preservation Program

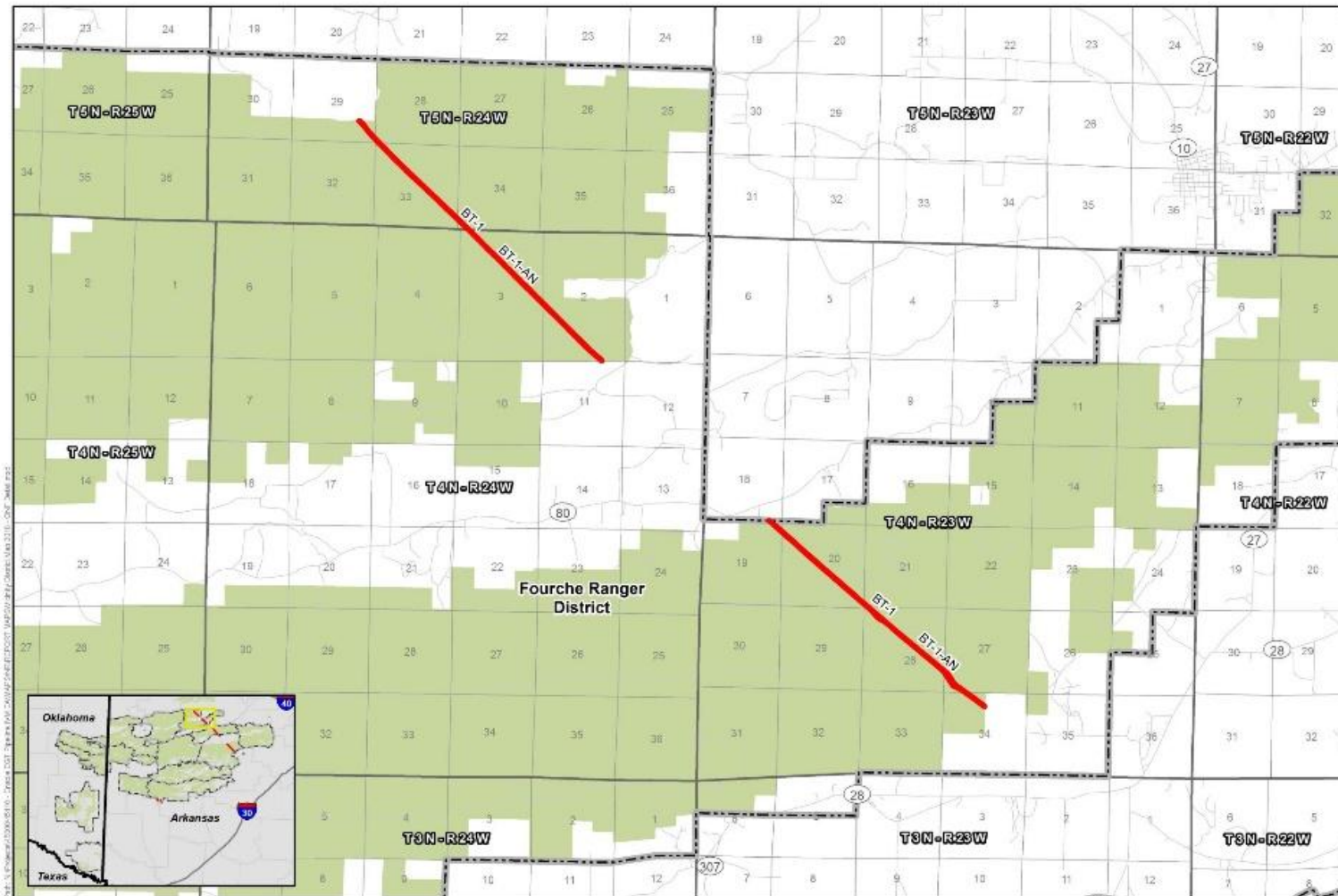
Chapter 5

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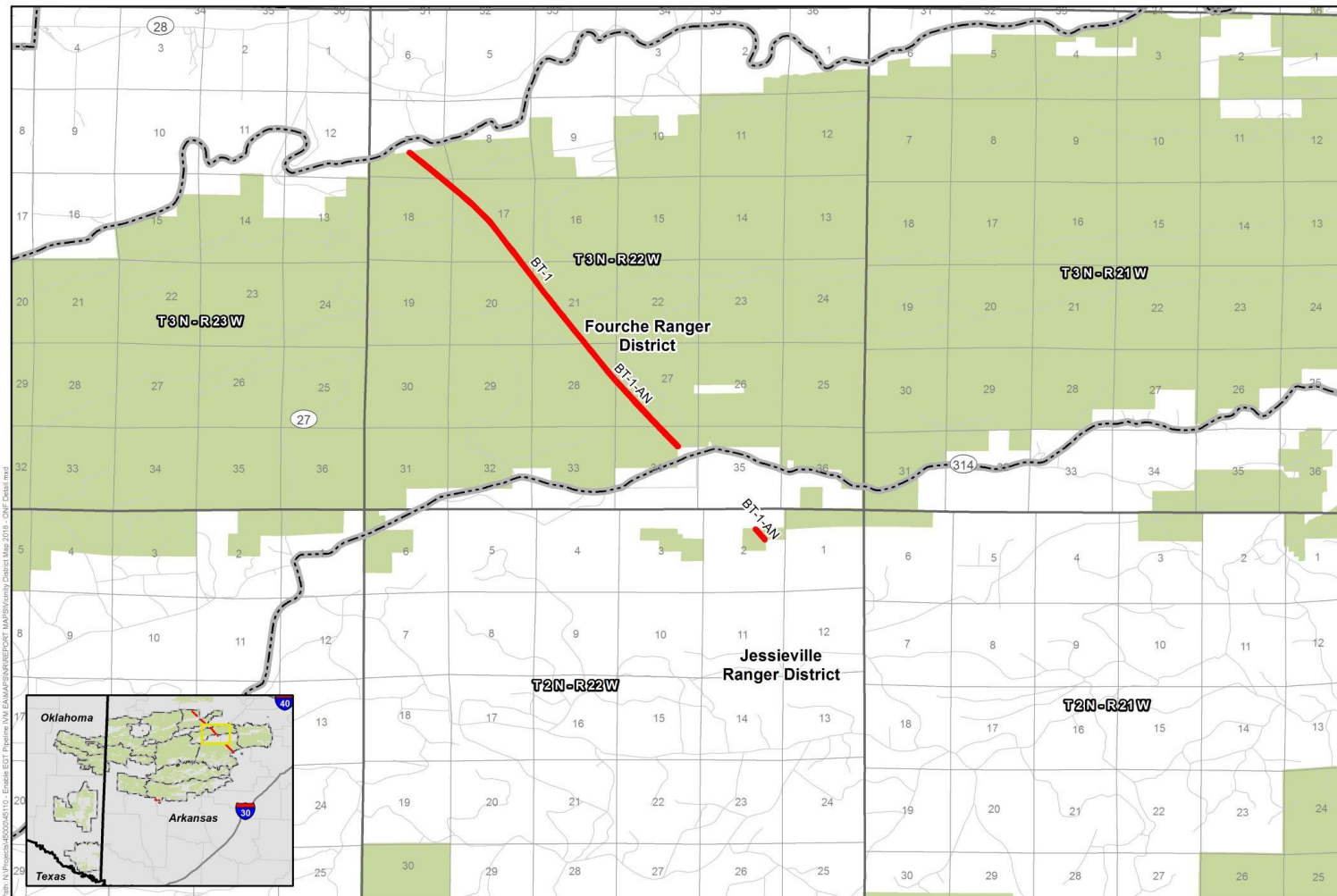
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Appendix A
Proposed Treatment Area Maps



<p>SWCA ENVIRONMENTAL CONSULTANTS</p> <p>8045 West Little York, Suite 600 Midwest, Texas 75040 (281) 637-3372 (phone) (281) 637-3373 fax www.swca.com</p>	<p>EGT PIPELINES OUACHITA NATIONAL FOREST</p> <p>SHEET 1 OF 4</p>	<p>— Project Centerline</p> <p>— Road</p> <p>— Ranger District Boundary</p> <p>— PLSS Boundary</p> <p>— NFS Lands</p>	<p>Background: ESRI Street Map</p> <p>Scale: 1:100,000</p> <p>Created by: JIS</p> <p>Approved by: JIS</p> <p>EGT Project No.: 18-010</p> <p>Date Printed: December 07, 2018</p> <p>NAD 1983 Zone 15N</p>
	<p>3 0.5 1 Mile</p> <p>3 0.5 1 0.5 Kilometers</p>		

Ouachita National Forest
Arkansas and Oklahoma

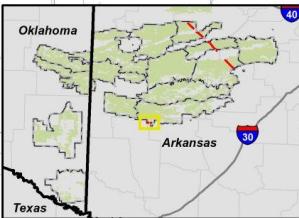
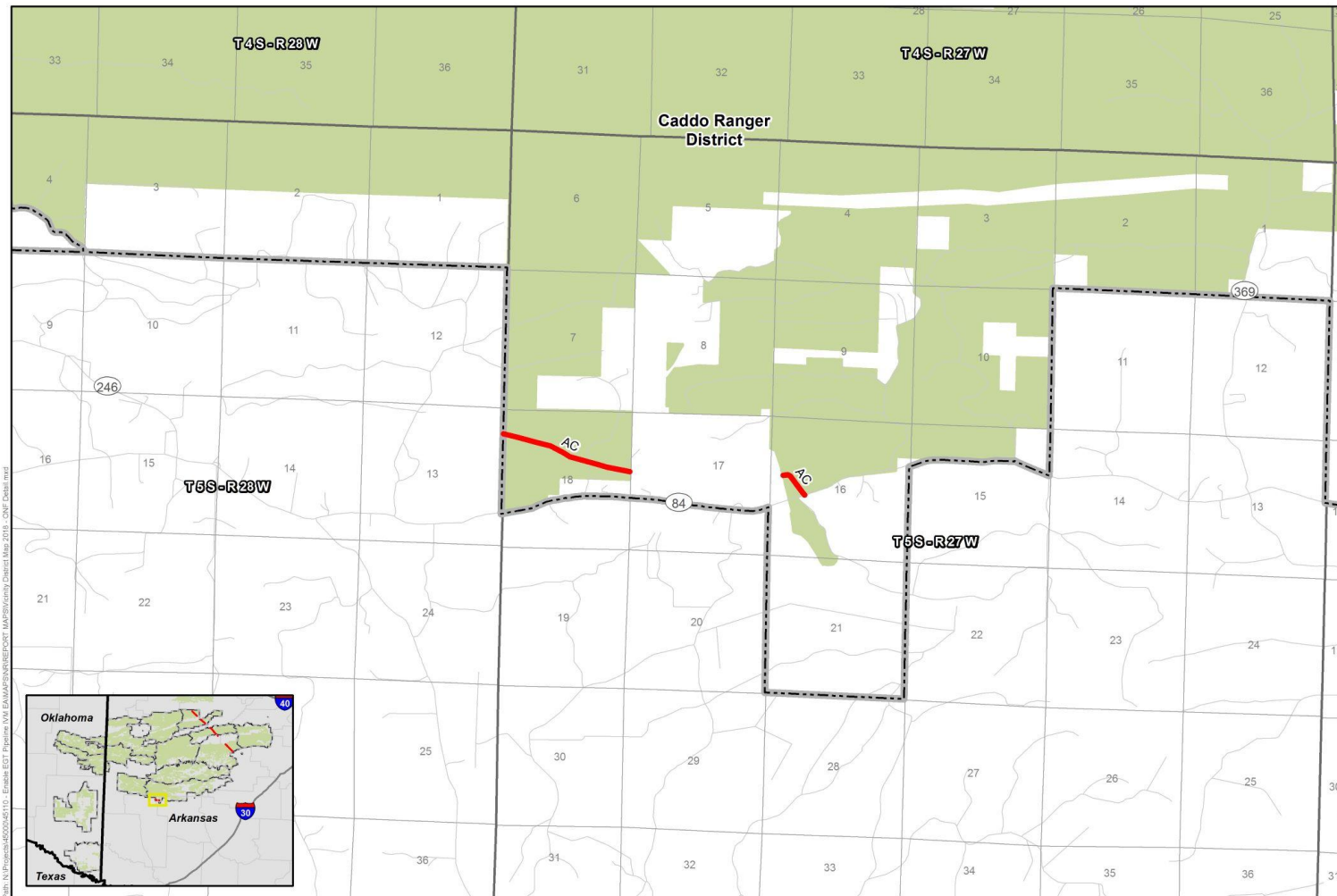


<p>10245 West Little York, Suite 600 Houston, Texas 77040 (281) 617-3217 phone (281) 617-3227 fax www.swca.com</p>	<p align="center">EGT PIPELINES OUACHITA NATIONAL FOREST</p> <p align="center">SHEET 2 OF 4</p>	<p> Project Centerline</p> <p> Ranger District Boundary</p> <p> PLSS Boundary</p> <p> Road</p> <p> NFS Lands</p>	<p></p> <p>Background: ESRI Street Map Scale: 1:100,000 Created By: KS Approved By: AH SWCA Project No.: 45110 Date Produced: December 04, 2018 NAD 1983 2011 UTM Zone 15N</p> <p>0 0.5 1 Miles 0 0.5 1 1.5 Kilometers</p>
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Arkansas and Oklahoma



Ouachita National Forest
Arkansas and Oklahoma



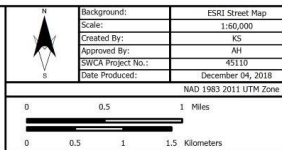
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**EGT PIPELINES
OUACHITA NATIONAL FOREST**

SHEET 4 OF 4

- Project Centerline
- Ranger District Boundary
- PLSS Boundary
- Road
- NFS Lands



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